Claims:

1. A heat exchanger comprising an oil cooler section, said oil cooler section comprising:

a first manifold and a second manifold in spaced relationship, and

a plurality of tubes, each said tube defining an oil flow passage and having a first end connected to said first manifold with said oil flow passage in fluid communication therewith and a second end connected to said second manifold with said oil flow passage in fluid communication therewith, each said tube being formed of tube metal and having a cross-section characterized by a performance ratio between about 3.9 and 8.5, wherein the performance ratio is a ratio of a wetted perimeter in millimeters divided by a cross-sectional area of the tube metal in square millimeters.

2. The heat exchanger of claim 1 wherein each said tube is an extruded metal tube comprising an outer wall and fins extending from said outer wall into the oil flow passage.

3. The heat exchanger of claim 2 wherein the extruded metal tube comprises webs that divide the oil flow passage into multiple discrete flow paths.

4. The heat exchanger of claim 2 wherein the fins are arranged in pairs aligned along an axis perpendicular to the direction of fluid flow and spaced apart by a gap.

5. The heat exchanger of claim 1 wherein the wetted perimeter is greater than about 100 millimeters.

6. The heat exchanger of claim 2 wherein the outer wall comprises dimples.

7. The heat exchanger of claim 1 wherein the tube comprises an outer wall defining a oil flow passage and an insert comprising a formed metal sheet disposed within the oil flow passage.

8. The heat exchanger of claim 7 wherein the insert is a turbulator.

9. The heat exchanger of claim 1 wherein the oil cooler section comprises fins interposed between adjacent tubes.

10. A heat exchanger comprising a first section and a second section for cooling distinct fluids, whereby the second section is adapted for cooling oil, said heat exchanger comprising:

a first manifold comprising a baffle dividing said first manifold into a first chamber and a second chamber;

a second manifold in spaced, parallel arrangement to said first manifold and comprising a baffle dividing said second manifold into a first chamber and a second chamber;

a plurality of tubes connecting the first manifold and the second manifold and defining flow passages in fluid communication with the first chambers, thereby forming said first section of the heat exchanger; and

a plurality of oil cooling tubes connecting the first manifold and the second manifold and defining fluid passages in connection with the second chambers, thereby forming the second section of the heat exchanger, each said oil cooling tube being formed of tube metal and having a cross-section characterized by a performance ratio between about 3.9 and 8.5, wherein the performance ratio is a ratio of a wetted perimeter in millimeters divided by a cross-sectional area of the tube metal in square millimeters.

11. The heat exchanger of claim 10 wherein the first section is a condenser for cooling refrigerant of an air conditioning system.

12. The heat exchanger of claim 10 wherein the tube is an extruded metal tube having an outer wall about the oil flow passage, and comprising fins extending into said oil flow passage.

13. The heat exchanger of claim 12 wherein the extruded metal tube further comprises webs that divide the oil flow passage into discrete flow paths.

14. The heat exchanger of claim 10 wherein the wetted perimeter is greater than 100 millimeters.

15. The heat exchanger of claim 10 wherein the tube comprises an outer wall defining a oil flow passage and an insert comprising a formed metal sheet disposed within the oil flow passage.

16. The heat exchanger of claim 15 wherein the insert is a dual-layer turbulator.